Attorney's Docket No.: 12732-160001 / US6524 Applicant: Satoshi Seo et al.

Serial No.: 10/622,504 : July 21, 2003 Filed

Page : 2 of 19

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Withdrawn) A material for an electroluminescence element, comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [1]:

[General Formula 1]

$$X_4$$
 X_1
 X_3
 X_2
 X_1
 X_2

(X1 to X4: hydrogen atom, halogen atom or cyano group)

2. (Withdrawn) A material for an electroluminescence element, comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain; and

a compound represented by the following general formula [2]:

Applicant: Satoshi Seo et al. Attorney's Docket No.: 12732-160001 / US6524

Serial No. : 10/622,504 Filed : July 21, 2003 Page : 3 of 19

[General Formula 2]

$$X_1$$
 X_2
 X_2
 X_2

(X1 and X2: hydrogen atom, halogen atom or cyano group)

3. (Currently amended) An electroluminescence element comprising:

an anode over a substrate;

a buffer layer over the anode;

- a hole transporting layer over the buffer layer;
- a light emitting layer over the hole transporting layer; and
- a cathode over the light emitting layer,

wherein the buffer layer comprises a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain; and

a compound represented by the following general formula [3]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 4 of 19

[General Formula 3]

$$\mathbf{x}_4$$
 \mathbf{x}_1
 \mathbf{x}_2
 \mathbf{x}_2
 \mathbf{x}_3
 \mathbf{x}_2
 \mathbf{x}_2

(X1 to X4: hydrogen atom, at least one is a halogen atom or alkyl group Y1 to Y2: dicyanomethlene group or cyanoimino group)

4. (Withdrawn) A material for an electroluminescence element, comprising:
a polymer compound containing a conjugate on at least one of a main chain and a side
chain; and

a compound represented by the following general formula [4]:

[General Formula 4]

5. (Withdrawn) A material for an electroluminescence element, comprising: a polymer compound containing a conjugate on at least one of a main chain and a side chain; and

a compound represented by the following general formula [5]: [General Formula 5]

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 5 of 19

 X_3 X_2 X_1 ...[5]

(X1 to X4: hydrogen atom or nitro group Y: oxygen atom or dicyanomethylene group)

6. (Withdrawn) A material for an electroluminescence element, comprising:
a polymer compound containing a conjugate on at least one of a main chain and a side chain; and

a compound represented by the following general formula [6]: [General Formula 6]

7. (Withdrawn) A material for an electroluminescence element, comprising: a polymer compound containing a conjugate on at least one of a main chain and a side

chain; and

a compound represented by the following general formula [7]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 6 of 19

[General Formula 7]

8. (Withdrawn) A material for an electroluminescence element, comprising:
a polymer compound containing a conjugate on at least one of a main chain and a side chain; and

a compound represented by the following general formula [8]:

[General Formula 8]

$$\begin{array}{c|c} R_4 & X_4 & X_1 \\ \hline \\ R_3 & X_2 & R_2 \end{array} \dots [8]$$

(X1 to X4: S, Se, or Te

R1 to R4: hydrogen atom, or alkyl group, or R1 and R2, or R3 and R4 may be connected with each other and form alkylene chain or condensed ring)

- 9. (Withdrawn) A material for an electroluminescence element, comprising:
 a polymer compound containing a conjugate on at least one of a main chain and a side
 chain; and
 - a compound represented by the following general formula [9]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 7 of 19

[General Formula 9]

$$R_4$$
 X_8
 X_4
 X_1
 X_5
 X_1
 X_5
 X_1
 X_2
 X_4
 X_2
 X_4
 X_5
 X_6
 X_2
 X_6
 X_8
...[9]

(X1 to X8: S, Se, or Te

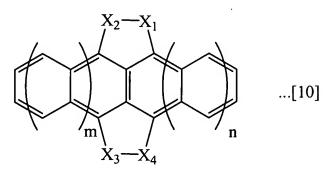
R1 to R4: hydrogen atom, or alkyl group, or R1 and R2, or R3 and R4 may be connected with each other and form alkylene chain or olefin double bond)

10. (Withdrawn) A material for an electroluminescence element, comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain; and

a compound represented by the following general formula [10]:

[General Formula 10]



(X1 to X4: S, Se, or Te n and m=0 to 1)

11. (Withdrawn) A material for an electroluminescence element, comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain; and

a compound represented by the following general formula [11]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 8 of 19

[General Formula 11]

$$R_4$$
 X_2
 R_3
 R_1
 X_1
 R_2
 R_2

(X1 and X2: S, Se, or Te R1 to R4: hydrogen atom, alkyl group, aryl group n=0 to 1)

12. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the anode, and the buffer layer comprising a material for the electroluminescence element comprising:

polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [1]:

[General Formula 1]

$$X_4$$
 X_1
 X_3
 X_2
 X_2

(X1 to X4: hydrogen atom, halogen atom or cyano group)

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003

Page : 9 of 19

13. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the anode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [2]:

[General Formula 2]

$$X_1$$
 ...[2]

(X1 and X2: hydrogen atom, halogen atom or cyano group)

14. (Currently amended) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the anode, and the buffer layer comprises a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [3]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 10 of 19

[General Formula 3]

$$X_4$$
 X_1
 X_3
 X_2
 X_2
 X_3

(X1 to X4: hydrogen atom, at least one is a halogen atom or alkyl group Y1 to Y2: dicyanomethlene group or cyanoimino group)

15. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the anode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [4]:

[General Formula 4]

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 11 of 19

16. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the anode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [5]:

[General Formula 5]

$$X_3$$
 X_2 X_1 ...[5]

(X1 to X4: hydrogen atom or nitro group Y: oxygen atom or dicyanomethylene group)

17. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the anode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [6]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 12 of 19

[General Formula 6]

18. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the anode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [7]:

[General Formula 7]

19. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the cathode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [8]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 13 of 19

[General Formula 8]

$$\begin{array}{c|c} R_4 & X_4 & X_1 & R_1 \\ \hline & X_3 & X_2 & R_2 & \dots [8] \end{array}$$

(X1 to X4: S, Se, or Te

R1 to R4: hydrogen atom, or alkyl group, or R1 and R2, or R3 and R4 may be connected with each other and form alkylene chain or condensed ring)

20. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the cathode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [9]:

[General Formula 9]

$$R_4$$
 X_8
 X_4
 X_1
 X_5
 X_1
 X_5
 X_1
 X_2
 X_4
 X_5
 X_6
 X_2
 X_6
 X_1
 X_2
 X_6
 X_1
 X_2
 X_3
 X_4
 X_5
 X_6
 X_7
 X_8
 X_9
 X_9

(X1 to X8: S, Se, or Te

R1 to R4: hydrogen atom, or alkyl group, or R1 and R2, or R3 and R4 may be connected with each other and form alkylene chain or olefin double bond)

21. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the cathode, and the buffer layer comprising a material for the

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 14 of 19

electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [10]:

[General Formula 10]

$$X_2$$
 X_1
 X_2
 X_1
 X_3
 X_4
 X_3
 X_4

(X1 to X4: S, Se, or Te n and m=0 to 1)

22. (Withdrawn) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer is in contact with the cathode, and the buffer layer comprising a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [11]:

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 15 of 19

[General Formula 11]

$$R_4$$
 X_2
 R_3
 R_1
 X_1
 R_2
 R_2

(X1 and X2: S, Se, or Te R1 to R4: hydrogen atom, alkyl group, aryl group n=0 to 1)

- 23. (Currently amended) A material for an An electroluminescence element according to claim 3, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof has redox properties.
- 24. (Currently amended) A material for an An electroluminescence element according to claim 3, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof comprises emeraldine base polyaniline.
- 25. (Previously Presented) An electroluminescence element according to claim 14, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof has redox properties.
- 26. (Previously Presented) An electroluminescence element according to claim 14, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof comprises emeraldine base polyaniline.

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 16 of 19

27. (Currently amended) An electroluminescence element comprising:

an anode; a buffer layer; an electroluminescence layer; and a cathode, wherein the buffer layer comprises a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [3]:

[General Formula 3]

$$\mathbf{x}_4$$
 \mathbf{x}_1
 \mathbf{x}_2
 \mathbf{x}_2
 \mathbf{x}_2
 \mathbf{x}_3

(X1 to X4: hydrogen atom, at least one is a halogen atom or alkyl group Y1 to Y2: dicyanomethlene group or cyanoimino group)

- 28. (Previously Presented) An electroluminescence element according to claim 27, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof has redox properties.
- 29. (Previously Presented) An electroluminescence element according to claim 27, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof comprises emeraldine base polyaniline.
 - 30. (Currently amended) An electroluminescence element comprising: an anode over a substrate; a buffer layer over the anode;

Applicant: Satoshi Seo et al. Serial No.: 10/622,504 Filed: July 21, 2003 Page: 17 of 19

an electroluminescence layer over the buffer layer; and a cathode over the electroluminescence layer,

wherein the buffer layer comprises a material for the electroluminescence element comprising:

a polymer compound containing a conjugate on at least one of a main chain and a side chain thereof; and

a compound represented by the following general formula [3]:

[General Formula 3]

$$X_4$$
 X_1
 X_2
 X_3
 X_2
 X_3
 X_2

(X1 to X4: hydrogen atom, at least one is a halogen atom or alkyl group Y1 to Y2: dicyanomethlene group or cyanoimino group)

- 31. (Previously Presented) An electroluminescence element according to claim 30, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof has redox properties.
- 32. (Previously Presented) An electroluminescence element according to claim 30, wherein the polymer compound containing the conjugate on the main chain or the side chain thereof comprises emeraldine base polyaniline.